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(12) **United States Patent**
Misic(10) **Patent No.:** **US 6,356,081 B1**
(45) **Date of Patent:** **Mar. 12, 2002**(54) **MULTIMODE OPERATION OF
QUADRATURE PHASED ARRAY MR COIL
SYSTEMS**(75) **Inventor:** **George J. Misic, Allison Park, PA (US)**(73) **Assignee:** **Medrad, Inc., Indianola, PA (US)**(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) **Appl. No.:** **09/449,255**(22) **Filed:** **Nov. 24, 1999****Related U.S. Application Data**(60) Provisional application No. 60/109,820, filed on Nov. 25,
1998.(51) **Int. Cl.⁷** **G01V 3/00**(52) **U.S. Cl.** **324/318; 600/422**(58) **Field of Search** **324/318, 322,**
324/300, 306, 307, 309, 314; 600/421,
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Gregory L. Bradley(57) **ABSTRACT**

A coil interface for coupling a phased array magnetic resonance imaging coil to a magnetic resonance imaging system. The coil interface includes a plurality of signal inputs and a plurality of output ports. Each of the output ports is associated with a receiver in the magnetic resonance imaging system. The coil interface also includes an interface circuit. The interface circuit selectively couples at least two of the signal inputs to at least one of the plurality of input ports. Where the coil is a quadrature phased array coil, a preferred embodiment allows the two quadrature signals to be acquired as a single signal, precombined at the RF level within the coil interface, or as two separate RF signals by two of the receivers of the magnetic resonance imaging system hardware.

19 Claims, 6 Drawing Sheets